Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
2019 World Radiocommunication Conference Advisory Committee	)	IB Docket No. 16-185
	)	

COMMENTS OF SPIRE GLOBAL, INC.

Spire Global, Inc. ("Spire") submits these comments in response to the Public Notice issued by the Federal Communications Commission ("Commission") International Bureau on March 11, 2019 in the above captioned proceeding.[1] The *PN* seeks comments on the draft recommendations provided by the World Radiocommunication Conference Advisory Committee ("WAC"), which are contained in Attachment A, and draft proposals, which are contained in Attachment B, that have been provided by the WAC for information as they did not reach full consensus by the membership. The 2019 World Radiocommunication Conference ("WRC-19") will consider these issues.

Spire's comments are limited to the proposal addressing WRC-19 Agenda Item 1.2 contained in Attachment A of the *PN*.

- In the 399.9-400.05 MHz band, Spire supports the United States adopting Document WAC/086 (11.03.19) ("WAC AI 1.2 Proposal"), which mirrors NTIA's proposal that eirp limits should not be applicable in the 400.03-400.05 MHz portion.

[1] *See International Bureau Seeks Comment on Recommendations Approved by World Radiocommunication Conference Advisory Committee*, Public Notice, IB Docket No. 16-185, DA 19-172 (rel. Mar. 11, 2019) ("*PN*").

- In the 401-403 MHz band, Spire supports the United States adopting WAC AI 1.2 Proposal, which proposes a 5-year transition period and DRAFT NEW RESOLUTION [TBD] (WRC-19) ("WAC AI 1.2 Proposal Resolution"), allowing certain grandfathered systems, such as Spire's system, to continue operations in the band indefinitely while protecting Data Collection System ("DCS") operations.

I. BACKGROUND

Spire is an Earth Exploration-Satellite Service ("EESS") and Meteorological-Satellite Service ("MetSat") operator currently using the 401-403 MHz band to telecommand its satellites performing critical maritime, aviation, meteorological, and hosted payload services. To avoid potential interference concerns in the 401-403 MHz band, Spire has also applied to use the 399.9-400.05 MHz band; its request has been deferred.

II. FOR AGENDA ITEM 1.2, THE UNITED STATES SHOULD SUPPORT NO EARTH STATION EIRP LIMITS IN THE 400.03-400.05 MHZ BAND AND SHOULD ADOPT THE WAC AI 1.2 PROPOSAL AS THE U.S. POSITION FOR THE 401-403 MHZ BAND.

Small satellite EESS/MetSat operators, such as Spire, require access to wideband spectrum to preform telecommand operations; however, there are only a limited number of UHF uplinks available: 399.9-400.05 MHz, 449.75-450.25 MHz, and 401-403 MHz. The United States has yet to allow Spire and other operators access to the 399.9-400.05 MHz band. The 449.75-450.25 MHz band has proven to be very noisy across various regions, and some U.S. Federal agencies are further limiting small satellite operators use of this band to the top 50 kHz. The 401-403 MHz band remains one of the free UHF uplink bands available to U.S. commercial small satellite operators.

For the 399.9-400.05 MHz band, Spire supports the NTIA proposal that earth station power limits should not be applicable in 400.03-400.05 MHz, allowing small satellite telecommand operations to continue without restriction indefinitely in that portion of the band.

For the 401-403 MHz band, Spire requests adoption of the WAC AI 1.2 Proposal. This method, without inclusion of any Resolution text, was inserted as Method G into the final Conference Preparatory Meeting ("CPM") Report at the February 2019 CPM-2.

In short, the WAC AI 1.2 Proposal would allow for a short 5-year transition period, as opposed to the previously proposed 10-year transition period, now matching the NTIA proposal. However, the WAC AI 1.2 Proposal introduces WAC AI 1.2 Proposal Resolution text, allowing certain grandfathered systems to continue operations indefinitely in the band while protecting DCS operations. Specifically, they will use the following mitigation techniques –

- Operate in GSO DCP portions of band only: 401.2-401.3 MHz, 401.7-401.899 MHz, and 402.067-402.850 MHz per ITU-R Recommendation SA.2045.
- Employ earth stations with antenna patterns with relative antenna gain pattern masks that achieve compliance with Recommendation ITU-R SA.1163-3. The earth stations shall avoid pointing at GSO DCS satellites sufficient for the antenna off-axis loss to reduce levels into the GSO DCS receivers to meet the relevant ITU-R thresholds for interference exceedance in Recommendation ITU-R SA.1163-3.

During and after CPM, Spire had informal discussions with National Oceanic and Atmospheric Administration ("NOAA"), the other respective user of the band in the United States, and it appears that the WAC AI 1.2 Proposal Resolution may be a workable compromise. NOAA is still reviewing at this time.

III. CONCLUSION

For the reasons provided herein, Spire urges the adoption of the Document WAC/086 (11.03.19) proposal for the 399.9-400.05 MHz and 401-403 MHz bands as the U.S. position for Agenda Item 1.2.

Respectfully submitted,

/s/ George John

George John
Spire Global, Inc.

Lead Legal & Regulatory Counsel
575 Florida Street, Suite 150
San Francisco, CA 94110
george.john@spire.com

March 14, 2019